

Selby, Esq. of Twizell-House;—and Part II. of a Descriptive Catalogue of the Gasteropodous Mollusca of Berwickshire. By George Johnston, M.D., F.R.C.S.E.

---

## PROCEEDINGS OF LEARNED SOCIETIES.

### ZOOLOGICAL SOCIETY.

July 13, 1841.—Professor Owen, Vice-President, in the Chair.

The following letter, addressed to Mr. Waterhouse, from James Brooke, Esq., was read:—

“ Singapore, 25th March, 1841.

“ My dear Sir,—I am happy to announce the departure of five live Orang Utans by the ship *Martin Luther*, Captain Swan, and I trust they will reach you alive. In case they die, I have directed Captain Swan to put them into spirit, that you may still have an opportunity of seeing them. The whole of the five are from Borneo: one large female adult from Sambas; two, with slight cheek callosities, from Pontiana; a small male, without any sign of callosities, from Pontiana likewise; and the smallest of all, a very young male with callosities, from Sadung. I will shortly forward a fine collection of skulls and skeletons from the north-west coast of Borneo, either shot by myself or brought by the natives, and I beg you will do me the favour to present the live Orangs and this collection to the Zoological Society. I have made many inquiries and gained some information regarding these animals, and I can, beyond a doubt, prove the existence of two, if not three distinct species in Borneo.

“ First, I will re-state the native account; secondly, give you my own observations; and thirdly, enter into a brief detail of the specimens hereafter to be forwarded.

“ 1st. The natives of the north-west coast of Borneo are all positive as to the existence of two distinct species, which I formerly gave you by the names of the *Mias Pappan* and *Mias Rambi*; but I have since received information from a few natives of intelligence that there are three sorts, and what is vulgarly called the *Mias Rambi* is in reality the *Mias Kassar*, the *Rambi* being a distinct and third species. The *Mias Pappan* is the *Simia Wurmbii* of Mr. Owen, having callosities on the sides of the face: the natives treat with derision the idea of the *Mias Kassar* or *Simia Morio* being the female of the *Mias Pappan* or *Simia Wurmbii*, and I consider the fact can be established so clearly that I will not trouble you with their statements: both Malays and Dyaks are positive that the female of the *Mias Pappan* has cheek-callosities, the same as the male; and if on inquiry it prove to be so, the existence of three distinct species in Borneo will be established. The existence of the *Mias Rambi* is vouched by a few natives only, but they were men of intelligence and well acquainted with the animals in the wild state. They represent the *Mias Rambi* to be as tall as the *Pappan*, or even taller, but not so stout, with longer hair, a smaller face, and no callosities

either on the male or female, and they always insisted that it *was* not the female of the *Pappan*.

“The *Mias Kassar* or *Simia Morio* is the same colour as the *Mias Pappan*, but altogether smaller, and devoid of callosities either on the male or female adults.

“By the native statements, therefore, we find three distinct species, viz. the *Mias Pappan* or *Simia Wurmbii*, the *Mias Kassar* or *Simia Morio*, and the *Mias Rambi*, which is either the *Simia Abelii* or a fourth species. The existence of the Sumatran Orang in Borneo is by no means impossible, and I have already compared so many of the native statements that I place more confidence in them than I did formerly, more especially as their account is in a great measure borne out by the skulls in my possession. I had an opportunity of seeing the *Mias Pappan* and the *Mias Kassar* in their native woods, and killing one of the former and several of the latter species. The distribution of these animals is worthy of notice, as they are found both at Pontiana and Sambas in considerable numbers, and at Sadung on the north-west coast, but are unknown in the intermediate country which includes the rivers of Sarawak and Samarahan. I confess myself at a loss to account for their absence on the Sarawak and Samarahan rivers, which abound with fruit, and have forests similar and contiguous to the Sadung Linga and other rivers. The distance from Samarahan to Sadung does not exceed twenty-five miles, and though pretty abundant on the latter, they are unknown on the former river. From Sadung, proceeding to the northward and eastward, they are found for about 100 miles, but beyond that distance do not inhabit the forests. The *Mias Pappan* and *Mias Kassar* inhabit the same woods, but I never met them on the same day; both species, according to the natives, are equally common, but from my own experience the *Mias Kassar* is the most plentiful. The *Mias Rambi* is represented as unfrequent and rarely to be met with. The *Pappan* is justly named *Satyrus* from the ugly face and disgusting callosities. The adult male I killed was seated lazily on a tree, and when approached only took the trouble to interpose the trunk between us, peeping at me and dodging as I dodged. I hit him on the wrist and he was afterwards despatched. I send you his proportions, enormous relative to his height, and until I came to actual measurement my impression was that he was nearly six feet in stature. The following is an extract from my journal relating to him, noted down directly after he was killed.

“Great was our triumph as we gazed on the huge animal dead at our feet, and proud were we of having shot the first Orang we had seen, and shot him in his native woods, in a Borneo forest, hitherto untrodden by European feet. The animal was adult, having four incisors, two canines and ten molars in each jaw, but by his general appearance he was not old. We were struck by the length of his arms, the enormous neck, and the expanse of face, which altogether gave the impression of great height, whereas it was only great power. The hair was long, reddish and thin; the face remarkably broad and fleshy, and on each side, in the place of a man's whiskers, were the

callosities or rather fleshy protuberances, which I was so desirous to see, and which were nearly two inches in thickness. The ears were small and well-shaped, the nose quite flat, mouth prominent, lips thick, teeth large and discoloured, eyes small and roundish, face and hands black, the latter being very powerful.

“ ‘ The following are the dimensions :—

	Ft.	In.
Height from head to heel . . . . .	4	1
Length of foot . . . . .	1	0
Ditto hand . . . . .	0	10 $\frac{1}{2}$
Length of arm from shoulder-blade to finger end. .	3	5 $\frac{3}{4}$
Shoulder-blade to elbow . . . . .	1	6
Elbow to wrist . . . . .	1	1 $\frac{1}{2}$
Hip to heel . . . . .	1	9
Head to <i>Os coccygis</i> . . . . .	2	5 $\frac{1}{2}$
Across the shoulders . . . . .	1	5 $\frac{1}{2}$
Circumference of neck . . . . .	2	4
Ditto below the ribs . . . . .	3	3 $\frac{1}{4}$
Ditto under the arms . . . . .	3	0
From forehead to chin . . . . .	0	9 $\frac{3}{4}$
Across the face, below the eyes, including callosities	1	1
From ear to ear across the top of head . . . . .	0	9 $\frac{1}{2}$
From ear to ear behind the head . . . . .	0	9 $\frac{3}{4}$

“ ‘ The natives asserted the animal to be a small one, but I am sceptical of their ever attaining the growth of a tall man, though I bear in mind that full-grown animals will probably differ as much in height as man.’

“ ‘ Some days after this, and about thirty miles distant, I was fortunate enough to kill two adult females (one with her young), and a male nearly adult, all the *Mias Kassar*. The young male was not measured, owing to my having waded up to my neck in pursuit of him, and thereby destroyed my paper and lost my measure; but he certainly did not exceed three feet, whilst the two females were about 3ft. 1in. and 3ft. 2in. in height. The male was just cutting his two posterior molars: the colour of all resembled that of the *Mias Pappan*, but the difference between the two animals was apparent even to our seamen. The *Kassar* has no callosities either on the male or female, whereas the young *Pappans* despatched by the Martin Luther (one of them *not a year old*, with two first molars) show them prominently. The great difference between the *Kassar* and the *Pappan* in size would prove at once the distinction of the two species, the *Kassar* being a small slight animal, by no means formidable in his appearance, with hands and feet *proportioned* to the body, and they do not approach the gigantic extremities of the *Pappan* either in size or power; and, in short, a moderately powerful man would readily overpower one, when he would not stand the shadow of a chance with the *Pappan*. Besides these decisive differences, may be mentioned the appearance of the face, which in the *Mias Kassar* is more prominent in the lower part, and the eyes exteriorly larger, in proportion to the size of the animal, than in the *Pappan*. The colour



of the skin in the adult *Pappans* is black, whilst the *Kassar*, in his face and hands, has the dirty colour common to the young of both species. If further evidence was wanted, the skulls will fully prove the distinction of species, for the skulls of two adult animals compared will show a difference *in size alone* which must preclude all supposition of their being one species. Mr. Owen's remarks are, however, so conclusive, that I need not dwell on this point; and with a suite of skulls, male and female, from the adult to the infant, of the *Mias Kassar*, which I shall have the pleasure to forward, there can remain, I should think, little further room for discussion. I may mention, however, that two young animals I had in my possession alive, one a *Kassar*, the other a *Pappan*, fully bore out these remarks by their proportionate size. The *Pappan*, with two molars, showed the callosities distinctly, and was as tall and far stouter than the *Kassar* with three molars, whilst the *Kassar* had no vestige of the callosities. Their mode of progression likewise was different, as the *Kassar* doubled his fists and dragged his hind quarters after him, whilst the *Pappan* supported himself on the open hands sideways placed on the ground, and moved one leg before the other in the erect sitting attitude; but this was only observed in the two young ones, and cannot be considered as certainly applicable to all.

"On the habits of the Orangs, as far as I have been able to observe them, I may remark, that they are as dull and as slothful as can well be conceived, and on no occasion when pursuing them did they move so fast as to preclude my keeping pace with them easily through a moderately clear forest; and even when obstructions below (such as wading up to the neck) allowed them to get away some distance, they were sure to stop and allow us to come up. I never observed the slightest attempt at defence, and the wood, which sometimes rattled about our ears, was broken by their weight, and not thrown, as some persons represent. If pushed to extremity, however, the *Pappan* could not be otherwise than formidable; and one unfortunate man, who with a party was trying to catch a large one alive, lost two of his fingers, besides being severely bitten on the face, whilst the animal finally beat off his pursuers and escaped. When they wish to catch an adult they cut down a circle of trees round the one on which he is seated, and then fell that also, and close before he can recover himself, and endeavour to bind him.

"In a small work entitled '*The Menageries*,' published in 1838, there is a good account of the Bornean Orang, with a brief extract from Mr. Owen's valuable paper on the *Simia Morio*; but, after dwelling on the lazy and apathetic disposition of the animal, it states in the same page that they can make their way amid the branches of the trees with *surprising agility*, whereas they are the slowest and least active of all the monkey tribe, and their motions are surprisingly awkward and uncouth. The natives on the north-west coast entertain no dread, and always represent the Orangs as harmless and inoffensive animals; and from what I saw, they would never attack a man unless brought to the ground. The rude *hut* which they are stated to build in the trees would be more

properly called a seat or nest, for it has no roof or cover of any sort. The facility with which they form this seat is curious, and I had an opportunity of seeing a wounded female weave the branches together, and seat herself within a minute; she afterwards received our fire without moving, and expired in her lofty abode, whence it cost us much trouble to dislodge her. I have seen some individuals with nails on the posterior thumbs, but generally speaking they are devoid of them: of the five animals sent home, two have the nails and three are devoid of them; one has the nail well-formed, and in the other it is merely rudimentary. The length of my letter precludes my dwelling on many particulars, which, as I have not seen the recent publications on the subject, might be mere repetitions, and I will only mention, as briefly as I can, the skulls of these animals in my possession. From my late sad experience I am induced to this, that some brief record may be preserved from shipwreck. These skulls may be divided into three distinct sorts. The first presents two ridges, one rising from each frontal bone, which joining on the top of the head, form an elevated crest, which runs backward to the cerebral portion of the skull.

"The second variety is the *Simia Morio*, and nothing need be added to Mr. Owen's account, save that it presents no ridge whatever beyond the frontal part of the head. No. 9 in the collection is the skull of an adult male: No. 2 the male, nearly adult, killed by myself: Nos. 11 and 3 adult females, killed by myself: No. 12 a young male, with three molars, killed by myself: No. 21 a young male, died aboard, with three molars: No. 19, young male, died aboard, with two molars. There are many other skulls of the *Simia Morio* which exactly coincide with this suite, and this suite so remarkably coincides through the different stages of age, one with another, that no doubt can exist of the *Simia Morio* being a distinct species. The different character of the skull, its small size and small teeth, put the matter beyond doubt, and completely establish Mr. Owen's acute and triumphant argument, drawn from a single specimen.

"The third distinction of the skulls is, that the ridges rising from the frontal bones do not meet, but converge towards the top of the head, and again diverge towards the posterior portion of the skull. These ridges are less elevated than in the first-mentioned skulls, but the size of the adult skulls is equal, and both present specimens of aged animals. For a long time I was inclined to think the skulls with the double ridge were the females of the animals with the single and more prominent ridge, but No. 1 (already described as killed by myself) will show that the double ridge belongs to an adult, and not young male animal, and that it belongs to the *Simia Wurmbii* with the huge callosities. The distinction therefore cannot be a distinction of sex, unless we suppose the skulls with the greater development of the single ridge to belong to the female, which is improbable in the highest degree. The skulls with the double and less elevated ridges belong, as proved by No. 1, to the *Simia Wurmbii*; and I am of opinion the single and higher ridge must be referred to another and distinct species, unless we can account for this difference on the

score of age. This, I conceive, will be found impossible, as Nos. 7 and 20 are specimens similar to No. 1, with the double and less elevated ridges *decidedly old*, and Nos. 4 and 5 are specimens of the single high ridge, likewise *decidedly old*.

"These three characters in the skulls coincide with the native statements of there being three distinct species in Borneo, and this third Borneon species *may* probably be found to be the *Simia Abelii* or Sumatran Orang. This probability is strengthened by the adult female on her way home: her colour is dark brown, with black face and hands; and in colour of hair, *contour*, and expression, she differs from the male Orangs, with the callosities, to a degree that makes me doubt her being the female of the same species. I offer you these remarks for fear of accident; but should the specimens, living and dead, arrive in safety, they will give a fresh impetus to the inquiry, and on my next return to Borneo, I shall, in all probability, be able to set the question at rest, whether there be *two* or *three* species in that country. Believe me, my dear Sir, with best wishes, to remain,

"Yours very truly,

"J. BROOKE."

Mr. Charlesworth exhibited to the Meeting a collection of skins of Mammalia and Birds, which he had obtained on the table-land of Mexico, and which he begged to present to the Society. Among the Mammals were adult specimens of the *Bassaris astuta*, Licht., of which animal a young individual had been procured by Messrs. Thompson and Charlesworth at Real del Monte, and forwarded, under the care of the Society's Corresponding Member, Lieut. Smith, as a present to the Menagerie.

The *Bassaris*, Mr. Charlesworth observed, is known in Mexico by the name 'Cacomistle'; it is abundant in the city itself, and indeed Mr. Charlesworth believes it is not to be met with at a distance from the abodes of man. Its habits are nocturnal, and it selects for its dwelling outhouses or uninhabited buildings, whence it sallies forth at night and commits great ravages in hen-roosts and pigeon-houses, and on this account every attempt is made by the Mexicans to exterminate it. The number of young which the *Bassaris* produces does not exceed three or four at a birth.

A skin of the *Ascomys Mexicanus*, Licht., or 'Tusa,' as it is called by the natives, was also exhibited by Mr. Charlesworth; and he drew attention to a curious fact in the economy of this Rodent, viz. that the cheek-pouches with which it is provided, and which open externally, are used for the purpose of conveying the soil from its subterranean retreats to the surface of the ground, where the mould is deposited in heaps, similar in appearance to those formed by the common Mole.

The skulls of these two animals were on the table; and Mr. Waterhouse observed, that that of *Bassaris astuta* presented all the characters of the skulls of the *Paradoxuri*, whilst the skull of *Ascomys Mexicanus* did not appear to him to offer any characters by which it might be distinguished (excepting as a *species*) from the crania of different species of *Geomys* which he had examined; and as the same



remarks would apply to the dentition, he thought it would be desirable to expunge one of these genera from our catalogues.

The following paper, entitled "Descriptions of several new species of *Chitones*, brought by H. Cuming, Esq., from the Philippine Islands," by G. B. Sowerby, Esq., jun., was next read.

CHITON SPINIGER. *Ch. Spiniger*, Mag. Nat. Hist. 1840, p. 287; Con. Illus., f. 68. *Ch. testá depressá, ovato-elongatá, omninò granulatá; valvis reclinantibus, terminalibus rotundatis; margine lato, spinis sub-arcuatis numerosis instructo.*

Long.  $2\frac{1}{10}$ ; lat.  $1\frac{1}{2}$  poll.

The description is here repeated, for the purpose of noticing two remarkable varieties brought by Mr. Cuming from the Philippines.

In the first variety the spines are comparatively short, and being coated in patches by calcareous matter, give to the margin an appearance of being banded with black and white. The valves are more rounded, and in some instances more coarsely granulated than in the specimens originally described. Found under stones at low water in Cagayan, province of Misamis, island Mindinão.

In the second variety the valves are more elevated. Found under stones at low water, in the island Siquijor.

The larger variety tends to connect the species with the variable *Ch. piceus*, from which it differs in the narrowness of the valves, the spinose margin, and the purplish flesh tint of the inside, which are the same in all the varieties.

CHITON ALATUS. *Ch. testá elongatá, subdepressá, griseo-virescente, fusco-virescente maculatá; valvis anticè coarctatis, primá et ultimá asperis; areis dorsalibus rotundatis, granoso-striatis; margine squamoso-granulato.*

*Hab.* ad insulam Siquijor et Zebu.

More depressed, having the marginal granulations coarser and the lateral areas more expanded than *Ch. limaciformis*.

Found under stones at low water.

CHITON TRUNCATUS. *Ch. testá ovali, minutissimè asperá, rosed aut pallidè fulvá, griseo-virescente maculatá, sulcis subdistantibus leviter undatá; areis lateralibus elevatis, expansis; valvâ posticâ conicâ, anticè subcomplanatâ, posticè truncatâ; margine lævi.*

Long. 1.50; lat. .80.

*Hab.* ad insulam Siquijor, Philippinarum.

Differing from *Ch. crenulatus*, Grayi, &c., chiefly in the conical shape and sudden termination of the last valve. The species is subject to great variations, both in the colour and in the strength of the undulating lines. Found under stones at low water.

Var. *testá sublævi.*

*Hab.* ad insulam Samar (Catbalonga).

CHITON INCISUS. *Ch. testá elongatá, griseâ, fusco-maculatâ; valvis angustis, subdisjunctis, elongatis, longitudinaliter undato-striatis, primâ sexfariam costatâ, medianis utrinque unicostatis; areis centralibus latis, ultimâ subconicâ, utrinque trifariam costatâ; fis-*

*surá triangulari posticè incisâ ; margine lato, fasciculis minutissimis numerosis instructo, posticè inciso.*

Long. 2.60 ; lat. 1 poll.

*Hab.* ad insulam Zebu (Daleguete).

It is to be regretted that no specimens of this very remarkable species should have been preserved with the soft parts ; it being probable that the fissure in the last valve and in the posterior part of the margin is accompanied by some anatomical peculiarity in the animal sufficient to establish its claim to generic distinction.

Found under stones at low water.

CHITON COARCTATUS. *Ch. testâ elongatâ, posticè coarctatâ, sub-tunicatâ ; valvis reniformibus, subdisjunctis, carinatis, asperis ; carinâ dorsali lævi ; margine lævi.*

Long. 1 ; lat. .50 poll.

*Hab.* ad insulam Bohol, Philippinarum.

From the peculiar shape of the valves, and the comparative smallness of the portion which remains uncovered, the observer would be led to look for the small tufts of hair found in the margins of some similarly-shaped species. All the specimens, however, have the margins perfectly smooth.

Found under stones at low water.

Aug. 10.—William Yarrell, Esq., Vice-President, in the Chair.

A letter from the Earl of Derby was read. This letter is dated August 7, 1841, and announces the arrival of a pair of the African Musk Deer (*Moschus aquaticus*, Ogilby) ; one of them (a female) is alive, and in good health, in his Lordship's menagerie. Having two skeletons of this animal, his Lordship has directed one of them to be forwarded as a present to the Society.

A letter from Dr. Cox, dated Naples, March 28, 1841, was read ; it refers to some engravings of a deformed foetus which this gentleman had sent for exhibition at one of the Society's scientific meetings.

A letter from the Society's corresponding member Dr. Poey was read. In this letter, which is dated Havannah, June 26, 1841, Dr. Poey informs the Society that he has forwarded for the Menagerie a living Raccoon, and he moreover makes some observations upon its habits.

A letter from Edward Blyth, Esq., was next read. This letter is addressed to the Curator, and is written by Mr. Blyth on his passage to India ; the writer relates some facts respecting various Mammals which have been communicated to him by his fellow-travellers. Lieut. Beagin, upon being shown some drawings of species of Gibbons, at once, in a figure of the *Hylobates leucogenys*, Ogilby, recognised an animal which he had met with, and examined, in the Malabar jungles. "Lieut. Beagin," observes Mr. Blyth, "has frequently seen this species in the Malabar ghauts, generally in groups of eight or ten, among which were brown individuals." "They appear to be unknown on the Coromandel side, but extend eastward to the Neilgherries ; inhabiting upland jungles, chiefly at about 2000 feet above the sea-level."



"The same gentleman is well acquainted with the *Semnopithecus Johnii*, which I observe is incidentally noticed in Harkness's work on the Aborigines of the Neilgherry hills, p. 61. This species is common enough in the depths of the forest, but never approaches the houses like the *Entellus*."

Mr. Blyth is also informed by Lieut. Beagin of the existence of a true Ibex, upon the Neilgherries, with long and knotty horns, curved backwards, and having a considerable beard, in which characters it differs from the Himalayan Ibex. "It keeps to the loftiest and most inaccessible crags, like the other Ibices. He has seen it repeatedly, in troops of a dozen or more individuals, and often endeavoured to obtain a specimen, but without success."

"The *Kemas hylocrius*, Ogilby, or 'Jungle Sheep,' (identified from one of my drawings,) is very generally, it appears, found in the hilly jungles of Peninsular India, keeping to the thick cover, and always met with solitarily, or in pairs. It is a very timid and shy animal, and when frightened utters a bleat like that of the domestic Sheep. Both sexes possess horns, those of the female being smaller; and indeed this sex is rudely figured in one of General Hardwicke's drawings in the British Museum, as the 'Warry-a-too' of the Chatagon Hills; besides which, this is probably the species indicated as the wild Sheep of Tenasserim of Capt. Low." [*Annals*, vol. iii. p. 258.]

"I shall now call your attention to some animals of North Africa, very good descriptions of many of which, obligingly furnished to me by Mr. Crowther (of the Queen's 63rd regiment), I have easily recognised as referring to known species; but there are several which are certainly new to naturalists, and among them two very fine Bovine animals, which the Society would do well to write about to their correspondents in that quarter. As Mr. Crowther described to me the Bubalis and the White Oryx, which are often designated 'wild cattle,' it must not be supposed that those animals are alluded to, as indeed is clear enough from the somewhat elaborate descriptions, and from the roughly-drawn sketches of both animals, *from memory*, which I enclose to assist those descriptions. These sketches will, at any rate, give some idea of the sort of animal, and go far to prove their distinctness from any which we are acquainted with.

"The 'Sherif al Wady' (or *River-chief*) stands six feet and upwards at its elevated withers. General form Bisontine; the carcass somewhat narrow, with flakes or rolls of fat on the sides of the neck; the limbs fine-boned and rather long, being terminated by comparatively small neat hoofs; the succentorial rather long; tail short, with its tuft of frizzled hair not reaching to the houghs. Head, it would seem, much like that of ordinary cattle, with small pointed ears, generally borne pendent, and naked of hair internally and towards the tip, which are delicate pinkish flesh-colour; eyes small and dark; the horns thick, cylindrical, smooth till towards their base, where they are a little rugose, and directed almost vertically upwards from the sides of the forehead; their colour dark, and length about a foot and a half. The character of the coat approaches that of Highland cattle in Britain, but is smoother toward the under

parts, with curly hair on the forehead ; some pendent hair (as shown in the drawing) from the site of the dew-lap (which latter is wanting), of the dark colour of the body, and a long but scanty white tuft hanging from the prepuce, as in Fallow Deer. General colour blackish brown, with a white belly ; the centre of the hump pale ash-colour, or even whitish, with radiating black hair surrounding this, four or five inches long. The cow is smaller and of a redder colour. The individual described was brought with two others, another male and a female, from the central region of Mount Atlas, and was presented by the Emperor of Morocco, in the year 1834, to the late Sir Peter Schousboe, who gave it to Mr. Crowther, in whose possession it lived for four months at Tangiers, when it was shot. It became tolerably tame, and its voice was a booming low, though, when irritated, it would roar in a different tone. The flesh proved to be rather coarse-grained, but that stripped from the sides of the dorsal apophyses, or hump, was excellent, and had the flavour of tongue. The skin was attempted to be preserved, but was destroyed by the rats. It was considered to be rather a rare animal. Should the above indications of it be confirmed, as I have no doubt they will, I propose that the species be denominated *Bos Atlantinus*. It is not improbably the *Empolunga* of Purchas.

“ The other wild Bovine species is much commoner, and has also much of the Bison in its general contour. Size that of Devon cattle, and colour red, with a flowing blackish nuchal mane ; (hence this animal is probably the *Wadan* of Capt. Lyon, if not also the *Pacasse*, *Empacasse*, or *Pegasus* of different authors). Its horns are very long and spreading in both sexes, but more so in the female, wherein they are also more slender ; they are cylindrical, a little rugose towards the base, and directed out and up ; head not much unlike that of common cattle, with no curly hair on the forehead ; the ears of moderate size, and broad ; and tail, with its tuft, reaching below the hock ; the hoofs are very black, and the secondary, or succentorial, short. There is little difference between the male and female in general aspect, but the calf is born of a whitish colour. The voice of this species much resembles that of common cattle, but is considerably more powerful. Its beef is excellent. They are occasionally seen solitarily, but more commonly in large herds, sometimes consisting of several hundreds ; at the rutting season in particular, which is about July, they are very fierce, and apt to attack without provocation ; they feed in the night, and by day pass much of their time standing knee and belly deep in water, like our tame cattle in summer ; their coat has a wavy surface. This species is found about Rabat, and near Salee, on the Barbary coast. I have heard before of such an animal, and it appears to be tolerably common.

“ Upon questioning Mr. Crowther respecting the Bear of Mount Atlas, which has been suspected to be the *Syriacus*, he knew it well, and it proves to be a very different animal. An adult female was inferior in size to the American Black Bear, but more robustly formed, the face much shorter and broader, though the muzzle was pointed, and both its toes and claws were remarkably short (for a Bear), the latter being also particularly stout. Hair black, or rather

of a brownish black, and shaggy, about four or five inches long; but, on the under parts, of an orange rufous colour: the muzzle black. This individual was killed at the foot of the Tetuan mountains, about twenty-five miles from that of the Atlas. It is considered a rare species in that part, and feeds on roots, acorns, and fruits. Does not climb with facility; and is stated to be very different-looking from any other Bear. The skin, like that of the 'Sherif al Wady,' was attempted to be preserved, but unfortunately met with the same fate."

Dr. Lhotsky then read his paper "On Animal Tuition and Animal Hygiene."

In the first part of this paper the author makes some observations on the food of animals, and especially with reference to the quality and quantity given to animals in menageries. He next proceeds with remarks upon their abode, dens, cages, &c., the importance of cleanliness, and upon their tuition.

August 24.—R. C. Griffith, Esq., in the Chair.

Mr. Westwood read his paper entitled "Descriptions of some Coleopterous Insects from Tropical Africa belonging to the Section *Heteromera*."

The insects comprised in this paper are of extreme rarity, and are the giants of the family *Tenebrionidæ*, constituting the genus *Chiroscelis* and other allied groups; some of them, however, appear to lead to *Lagria* in their metallic colouring, &c.

#### CHIROSCELIS, Lamarck.

Sp. 1. *Chiroscelis bifenestra*, Lam., Ann. du Muséum, iii. p. 260.

Sp. 2. *Chiroscelis digitata*, Fabricius (*Tenebrio* d., Syst. El. i. p. 145). Considered by the author as most probably distinct from the preceding, both in size and locality.

Sp. 3. *Chiroscelis bifenestrella*, W. *Nigra, nitida, capite minus rugoso, mandibulis minus dentatis, maculis duabus ventralibus ♀ minutis rotundatis, margine antico pronoti haud puncto notato, tibiis quatuor posticis ferè rectis; intermediis ad apicem magis dilatatis.*

Long. corp. vix lin. 14.

Hab. Guinea. Mus. Westw. Commun. D. Raddon.

Sp. 4. *Chiroscelis Passaloides*, W. *Nigra, nitida, vertice trituberculato, tibiis latissimis planis, anticis serratis, posticis intus versus apicem dente armatis.*

Long. corp. lin.  $19\frac{1}{2}$ – $20\frac{3}{4}$ .

Hab. Guinea. Mus. Westw. Commun. D. Raddon.

#### PRIOSCELIS, Hope, Col. Man. iii. p. 128.

Divis. 1. *Clypeus anticè haud emarginatus, margine antico in medio 1-tuberculato. Maxillarum lobus internus apice corneo bifido. Prothorax suboctogonus. Elytra ad humeros acutè angulata.*

Sp. 1. *Prioscelis Fabricii*, Hope, l.c.

Long. corp. lin. 20.

Hab. Sierra Leone. Mus. Hope.



Divis. 2. *Clypeus antice emarginatus, margine antico haud tuberculato. Maxillarum lobus internus apice corneo integro. Prothorax subquadratus magis transversus. Elytra humeris rotundatis.* (Iphius, Dej. Cat.)

Sp. 2. *Prioscelis serrata, Fabricius* (Tenebrio s.).

Sp. 3. *Prioscelis Raddoni, W. P. antennis brevibus articulo ultimo quadrato; tibiis anticis curvatis, apice dilatatis; posticis intus serrulatis extus ad apicem subitò dilatatis, prothorace transverso-quadrato, punctis duobus minutis distantibus versus marginem posticum.*

Long. corp. lin. 14.

Hab. in Guinea. Mus. Westw. Commun. D. Raddon.

Sp. 4. *Prioscelis crassicornis, W. P. atra glabra, antennis longioribus crassioribus femoribus omnibus ante apicem internè bidentatis, tibiis compressis.*

Long. corp. lin. 13.

Hab. in Guinea. Mus. Westw. Commun. D. Raddon.

#### PYCNO CERUS, Hope, MSS.

(PACHYLOCERUS, Hope, Col. Man. iii. p. 186.)

Sp. 1. *P. Westermanni, Hope, l. c.* (An *Ten. sulcatus, Fabric.*?)

Sp. 2. *P. costatus, Silbermann* (Odontopus c., Rev. Ent. Col., No. 4.).

#### ODONTOPUS, Silberm.

Sp. 1. *O. cupreus, Fabric.* (Tenebrio cu.). *O. violaceus, Silb. var.?*

Sp. 2. *O. tristis, W. O. chalybeo-ater, capite et prothorace opacis, tenuissime punctatis, hujus marginibus lateralibus crenulatis, elytris subviridibus magis nitidis valde et irregulariter punctatis, suturâ lineisque tribus tenuibus longitudinalibus lævibus, femoribus simplicibus, tibiis anticis apicem versus intus dente instructis, tibiis posticis curvatis, intus sinuatis.*

Long. corp. lin. 12½.

Hab. Senegallia? Mus. Westw.

Sp. 3. *O. cyaneus, Fabricius* (Tenebrio cy.).

Sp. 4.? *O. speciosus, Dejean* (Pezodontus sp.).

#### METALLONOTUS, Gray.

Sp. 1. *M. denticollis, Gray, in Griff. An. K., Ins. Pl. LXXX. f. 4.*

#### PRÆUGENA, Laporte, Hist. n. An. Art.

Sp. 1. *Pr. rubripes, Laporte.*

Sp. 2. *Pr. carbonaria, Klug, in Erman's Reise.*

Sp. 3. *Pr. marginata, Fabricius* (Helops m.).

Various observations were added by the author relative to the synonymy and generic position of the species above described, and of other tropical African species described by Fabricius, Silbermann, Laporte, &c., and long generic and specific characters were given of the majority, accompanied by numerous illustrations of the generic and structural details.

## MICROSCOPICAL SOCIETY.

At a meeting of the Microscopical Society held January 26th, 1842, Richard Owen, Esq., F.R.S., President, in the Chair, a paper was read by Mr. John Quekett, "On the Presence in the Northern Seas of Infusorial Animals analogous to those occurring in a Fossil state at Richmond in America." After alluding to the great discoveries of Professor Ehrenberg in this department of science, the author proceeded to mention a stratum of animalcules twenty feet thick, recently detected by Professor Rogers, underlying the city of Richmond in Virginia; it contains remarkable specimens of *Navicula*, *Actinocyclus*, *Gallionella*, &c., but the most extraordinary form is a circular disc with markings very similar to those on the engine-turned back of a watch. On examining the sandy matter which had been washed from some zoophytes brought home by the Northern Expedition under Capt. Parry in 1822, the author has detected more than six animalcules in it precisely analogous to those occurring as fossils in the Richmond sand, and amongst these the circular disc above described; these last occur in the fossil state singly, very rarely in pairs, and some doubts have arisen as to what they really were; but from the investigations of the author they are found to be a species of bivalve, and many may be seen enclosing animal matter between their valves. Other bivalves fully as large as these are to be seen without markings on their surfaces, and some very minute specimens were attached to portions of sea-weed by a small stem or pedicel. The paper was accompanied with diagrams and with the animalcules, both recent and fossil, for examination.

Feb. 16th.—Professor Lindley, President, in the Chair. A paper was read by H. H. White, Esq., of Clapham, on fossil *Xanthidia*. After stating that these Infusoria, which are of a yellow colour and found imbedded in the substance of chalk flints, formed a genus of the tenth family of the class Polygastrica called *Bacillaria*, the author then proceeded to describe twelve species, which were distinguished from each other principally by the number and form of their tentacula, which project from the external investment or lorica of the animal; each species was separately described, and the author concluded with some observations on the mode in which they became silicified, and on the formation of flints generally. The paper was accompanied with specimens and illustrative diagrams.

## ROYAL SOCIETY OF EDINBURGH.

February 7th, 1842.—Sir Thomas Brisbane, Bart., in the Chair.

The concluding part of Dr. J. H. Bennet's paper on Parasitic Fungi growing on living animals was read, and as portions of it bear directly on natural history, we shall briefly allude to these. Fungi of this description have previously been noted as occurring in the stickleback and common carp, but we are not aware that any particular description has yet been supplied of these fungi. Dr. Bennet had an opportunity of examining them upon the gold carp, *Cyprinus auratus*, having been persistent before death. To the eye

they presented the appearance of a white cottony or flocculent matter attached to the animal. Under the microscope it presented two distinct structures, which were severally cellular and non-cellular. The former consisted of long tubes divided into elongated cells by distinct partitions. At the proximal end of several of these cells was a transparent vesicle about  $\cdot 01$  of a millimetre in diameter, which the author considered to be a nucleus. Some of the cells were filled with a granular matter; others however were empty, the granules having escaped through a rupture of the tube or of the cellular walls. Besides these there were long filaments about  $\cdot 06$  of a millimetre in diameter, which apparently sprung from the sides of the cellular tubes. They were uniform in size throughout their whole length, and were formed of an external delicate diaphanous sheath, and an internal more solid transparent matter. This vegetable structure sprung from a finely granular amorphous mass. Fungi of a similar kind were also found in the lungs of a man who died of pulmonary consumption, and from whose lungs they were also copiously discharged in the expectoration during life. The vegetable structure in this instance consisted of tubes, jointed at regular intervals, and giving off branches generally dichotomous. They varied in diameter from  $\cdot 01$  to  $\cdot 02$  of a millimetre, and appeared to spring without any root from an amorphous, soft, finely granular mass. They gave off at their extremities numerous oval, round or oblong corpuscles, arranged in bead-like rows, which were considered reproductive spores. The same appearances were found in the soft cheesy matter lining some of the tubercular cavities after death. The author had likewise an opportunity of examining the mycodermatous vegetations which constitute in man that disease of the skin named *Porrigio Lupinosa*, and gave a particular account of them as seen under the microscope. He also supplied a bibliographical account of all that had been previously done in this obscure and interesting subject, and concluded by remarking, 1st. That these vegetations are not the cause, but the result of disease in animals; 2nd. That they grow upon the inorganic matters effused into the different textures, which are probably of an albuminous or tubercular nature; 3rd. That they only occur in animals or in parts of animals, previously weakened by circumstances inducing imperfect nourishment; and 4th. That the indications for treatment are, 1st, to invigorate the system, and 2nd, to apply locally, if possible, such applications as tend to destroy vegetable life.

#### BOTANICAL SOCIETY OF EDINBURGH.

December 9, 1841.—Professor Balfour (of Glasgow), and subsequently Professor Graham, in the Chair.

Communications were read—

1. On the groups *Triandra* and *Fragiles* of the genus *Salix*, by the Rev. J. E. Leefe, Audley End, Essex.

“Whoever would study the willows with success, must see them growing at different seasons of the year; for fragments gathered at one season only serve to perplex and confuse the botanist. An-



other source of confusion is the practice of collecting specimens without numbering *them* and the *tree*, trusting subsequently for identification to the memory alone, whereby a most unpleasant feeling of uncertainty is produced. The changes in the form of the leaves, and in the relative proportion of some of the parts of fructification at different periods of growth, are often so surprising, that without a mark of recognition, I should frequently have doubted whether my specimens had been all collected from the same tree. Again, it is a common practice to select for preservation the largest and most vigorous-looking specimens, in consequence of which an erroneous idea of the *average character* is very apt to be produced. If an unusually luxuriant specimen be chosen, it should have a corresponding label. Were those whose residence is fixed for a great part of the year to give their attention regularly to this interesting tribe, and above all, to set aside a portion of ground in their gardens for the cultivation of the most intricate species, much of the uncertainty which at present deters botanists from the study of the *Salices* would probably disappear; but the hasty collection of fragments in flower, and above all, the un-identified addition of leaves, serve only to perpetuate mistakes. If I might take the liberty of recommending to others a practice which I have myself profitably followed, I should advise that the specimens of every *Salix* in a herbarium (excepting, of course, species about which there can be no mistake) should be such as to present one or more regular series illustrative of the *progressive* development of the catkins, each set being taken from the same tree at intervals during the flowering season,—and that at least two specimens of the leaves, gathered at different periods, should be preserved, so as to show the form of the stipules, and the progressive alteration in the foliage;—also, that thin sections of a catkin of each species, perpendicular to the axis, should be gummed down, by which means the form of the ovary and any other particular respecting it—the length and pubescence of its stalk, the nectary, the character of the axis, and the number of ovaria in a given length of the spiral, could easily be seen without mutilating the other specimens. The exact date also of each specimen should be registered, whereby many ambiguities would be removed. The willows, though numerous here (Audley End, Essex.), are not cultivated to such a profit as they might be. *Salix Russelliana*, though plentiful, is confounded with *S. fragilis*; nor is the bark held in any esteem. The cærulean variety of *S. alba* has, however, been sold to advantage to the makers of bonnet-shapes, as it is reputed not to stain. To show the quick return which the arborescent willows would afford, I may mention that a tree of *S. alba* var. *cærulea*, planted in 1815, at the end of nineteen years measured in circumference, at one foot from the ground, seven feet eight inches; and in October 1841, at twenty-six years of age, its circumference was ten feet three-quarters of an inch, and its height seventy-seven feet.”

The author then proceeds to give a particular description of each species in the above groups—remarking of *S. decipiens*, that though it appears to be of little use for economical purposes, “it forms a

handsome bush or small tree, remarkable at a short distance for the bright hue of its leaves ;"—of *S. fragilis* and *S. Russelliana*, "that they both form large trees, but do not appear to grow so fast, or to attain so large a size, as *S. alba*."

2. On three newly proposed species of British *Jungermannia*, by Dr. Taylor, Dunkerron. Communicated by Mr. William Gourlie, jun.

This paper, though valuable to the botanist, is of too technical a kind for even an abstract of it to be given here. One remark by the writer may be inserted, and it would be well if the rule, which he justly commends, were followed with regard to many other groups of plants, till, by repeated observations, they have become sufficiently known. He says—"It was with great propriety that the distinguished author of 'British Jungermannia' placed certain specimens, then newly discovered, which had been found in small quantities and in limited localities, as *varieties* of the species which they most nearly approached, leaving to future and more extended observation the task of raising them to a higher rank, if supported by competent distinctions."

3. Remarks on the Flora of Shetland, with a full catalogue of plants observed in these islands, by Mr. Thomas Edmonston, jun.

Mr. Edmonston observed, that the botany of Shetland had never been adequately investigated. Dr. Neill, who spent ten days or a fortnight there in 1804, was the first to enter upon this field, and he was followed by Dr. Gilbert M'Nab, who spent a few weeks there in 1837. Mr. Edmonston (a native of Shetland) has devoted the last four years to this agreeable pursuit, and in that time has visited the whole district. Two years ago he transmitted to London a list of the plants which had then been observed by him, and this list, though incomplete, and in some instances inaccurate, made its appearance lately in the 'Magazine of Natural History,' without any previous intimation, so that he had no opportunity of correcting it.

The Orkney Islands, which are numerous, stretch about seventy miles from S.E. to N.W. Their zoological formation is altogether primitive, the most abundant rocks being gneiss, granite, and limestone, which are very generally covered by large tracts of peat moss, and often destitute of all vegetation excepting the commonest bog-plants. Unst is the most northerly island, and is also the most diversified in its formation; gneiss, mica-slate, chlorite-slate, and serpentine being all found on it. Its vegetation is equally varied, some of the species being peculiar to it in Britain, and others being rare elsewhere. The most interesting of these, viz. *Arenaria norvegica* and *Lathyrus maritimus*, were discovered by Mr. Edmonston, when he was little more than twelve years of age. Ronas Hill, which attains an elevation of about 1500 feet, is the highest land in Shetland, and it is only upon it that the botanist meets with anything like alpine vegetation. The largest island, usually called the mainland, presents little of interest; but is, for the most part, a succession of dreary peat moors, occasionally enlivened by *Scilla verna* and *Pinquicula vulgaris*; nor are the other islands generally more productive, though sometimes a fertile spot occurs.

"The general character of Shetland vegetation," says Mr. Edmonston, "seems to be sub-alpine or nearly so, for we find plants belonging properly to that region in every situation, such as *Thalictrum alpinum*, *Draba incana*, &c., which grow down almost to the sea-level."

The list of species which accompanied this paper comprehends 395 in all, viz. 286 phanerogamic and 109 cryptogamic; the latter consisting of 22 Ferns, 65 Mosses, and 22 Hepaticæ.

4. Account of a Botanical Excursion in Norway, by Dr. John Shaw.

The circumstance that most struck Dr. Shaw in this tour was the almost total absence of *Calluna vulgaris*, which covers our Scottish moors, but which in Norway is so far from being common, that throughout an extent of 600 miles he "could scarcely find a specimen of it." He also remarks on the extreme wildness and sterility of some tracts, as contrasted with the fertility and luxuriance of vegetation in others. The species which he observed were in general the same as those which grow in Scotland; those not indigenous here being in about the proportion of one to five; but several plants which are extremely rare in this country, such as *Menziesia cærulea*, *Pyrola uniflora*, and *Linnaea borealis*, &c., he found abundant in many places. He was also particularly gratified by the beauty and luxuriance of *Trollius europæus*, of which he observed "myriads, with their corollas like half-pounds of butter, gracefully waving their heads, almost in the frozen region."

The heat of the July sun he describes as most oppressive, and the swarms of gnats as tormenting beyond endurance.

January 13th, 1842, Professor Christison in the Chair.

The following papers were read:—

1. Notes on preserving the Colour of certain Vegetables by immersing them in hot water, by Mr. Evans.—It is well known to every one who has had any experience in the drying of specimens, that, while many plants are easily preserved by the ordinary means of placing them between layers of absorbent paper, and subjecting them to certain degrees of pressure, there are others that cannot be so readily dried; and some are even so constant in their tendency to turn black in drying, that this feature has been deemed characteristic of them. The use of hot water, as a means of accelerating the process of desiccation in certain vegetables, has been long known to botanists; but Mr. E. is not aware of its having been employed, to any extent at least, as a means of preserving their colours. To Mr. Peter Henderson, one of the gardeners at Melville Castle, the chief merit of this application is due, he having, last summer, succeeded by it in preserving *Lathræa squamaria* and some other plants which ordinarily become black in drying, particularly *Asperula odorata*, *Melampyrum pratense*, *Agraphis nutans*, *Rhinanthus Crista galli*, and several *Orchideæ*. During the summer and autumn, Mr. Evans tried the same method, and found that, besides the greater beauty of the specimens thus treated, they could be dried in nearly one-half of the time usually required; as also that, from the power of hot water in destroying rigidity,



they were much more easily arranged on the drying-paper. Mr. Evans observed, that while he and his friend, in pursuing this method, were guided almost entirely by the nature of the plants subjected to the process, they considered from twenty to thirty seconds a medium time to keep "*Orchideæ*" and other plants of a robust and fleshy nature in the water, which was always kept boiling; while a mere dip was found sufficient for those of more delicate structure. He is, however, of opinion that the success of their method is not to be entirely attributed either to the temperature of the water used, or the exact time the plants are kept in it, but depends much on the frequent changing, for some time, of the paper in which they are afterwards placed; as unless this is strictly attended to, the specimens will be speedily destroyed by the great quantity of water with which they are at first surrounded. It has been recommended, as a means of freeing the plants from external moisture, before placing them in the drying-paper, to press them gently between cloths; and this he considers beneficial for plants of a robust nature, but rather injurious to the more delicate ones,—to these he merely gives a gentle shake, but changes the paper sooner about them than the others. Mr. Evans concluded by observing that, besides the utility of this method for retaining the colour of the leaves of such plants as naturally become *black* in drying, it will be found serviceable in preserving the *blue* colour of the corollas of *Campanulas* and some other plants, which rather incline to turn *white*.

The specimens exhibited by Mr. Evans in illustration of his success were most beautiful, the colour being in almost all of them perfectly retained; and to show that it was their previous immersion in *hot* water which had effected this object, he had purposely kept some portions of them out of the water, and in such instances *only* the immersed parts had retained their natural colour.

2. Notice relative to certain Species found in the Parish of Alvah, Banffshire, with a List of Plants observed in that Parish, by the Rev. A. Dodds. Communicated by Mr. W. A. Stables.—The chief interest of this paper arose from the contrast which it presented between the south and north parts of Scotland in regard to the occurrence and comparative frequency of several species; the recent occurrence of some which have now become generally disseminated, to the farmer's great annoyance, such as *Senecio Jacobææ*, and the gradual disappearance of others which were formerly common, as *Arctium Lappa*, &c.

3. Description, with Drawing, of a Vegetable found on the Gills and Fins of a Goldfish, by Mr. Goodsir.—In this interesting paper Mr. Goodsir gave a minute description of the parasite, explaining practically its form, structure, and mode of fructification, &c.; but the fish having died during its conveyance to town, and putrefaction having commenced before he saw it, his observations were necessarily imperfect on some points which he had felt anxious to illustrate. Professor Christison stated, that above a year ago he had noticed a similar parasite on a goldfish, which was entirely covered with it as

with a soft down, but the animal's health did not seem at all affected, and he believed it was still alive; nor was the affection communicated to other fishes which were put for some time in the same vessel with it. Mr. Bennet also stated the result of some microscopical observations made by him on Mr. Goodsir's fish, chiefly with reference to the condition of the animal under the invasion of its vegetable foe.

4. Remarks on the affinities subsisting among *Viola lutea*, *arvensis*, and *tricolor*, by Alexander Seton, Esq., of Mounie.—Mr. Seton says, that not having been able to discover any definite or permanent distinction between the plants which had been termed *V. lutea* and *tricolor*, his attention was directed to their comparative appearance and habits in native situations; and having found all gradations of form, colour, and habits between the extreme characters of the perennial plant called *lutea* and the annual called *tricolor*, he had come to the conclusion that they are originally from the same stock or species. As to the form of the stipules, and the different degrees of ramification or divarication in the stem, which Smith, Hooker, and other writers have adopted as distinguishing marks, they are so varying as to be totally unsuitable for that purpose. On the other hand, the *Viola*, which has been by some termed *V. arvensis*, but has for the most part been considered as a variety of *V. tricolor*, is so different, and so constant in its general character, that he is inclined to consider it a separate species, though in most particulars extremely similar. It is completely annual, and he has never found it with that multiplicity of stems arising from a spreading root and radicating at their base, which are usual with the two others when they have remained for any length of time undisturbed. It is also taller and more succulent in the herbage than *V. tricolor*, even when the latter is in a rich and congenial soil; and it maintains its characteristics when propagated by the seeds, without those gradations of variety which obliterate distinctions of species; for having observed it growing in corn-fields and by way-sides along with *V. tricolor*, not only in this kingdom, but also in France, Italy, and Germany, (in all of which countries both species are common,) he uniformly found it retaining its own peculiarities, unblended with those of its congener. But though the habits and general appearance of the plants are considerably different, yet their various parts are so much alike, that he is unable to find any other descriptive distinction than the proportion between the calyx and corolla. Mr. Seton also notices some remarkable variations in form and habit, obviously arising from soil or locality, in several other plants, such as *Trifolium pratense*, *Plantago lanceolata*, &c.

5. Notice respecting some late Additions to the Flora of Jersey, by Joseph Dickson, Corresponding Secretary.—The chief interest of this paper consisted, as in the case of No. 2, in the contrast afforded with the vegetation of other parts of Britain; and the author promised to take an early opportunity of extending his observations on this subject.